



Auki Labs makes products that allow people to **create, own, inhabit** and **interact** with virtual worlds and objects anchored in reality.

Our decentralized **peer-to-peer positioning** system will give every cubic millimeter an address, **replace the GPS system**, and enable a **persistent AR metaverse**.

We are on a mission to help every person and device find their place in the world. Literally.

WHAT'S WRONG WITH AUGMENTED REALITY?

AR IS NOT SOCIAL

It is prohibitively difficult to share an AR experience with other participants.

SLOW CALIBRATION

The current state-of-the-art method of collaborative depth map/digital twin calibration takes 20-60 seconds, creating a large barrier to entry for joiners.

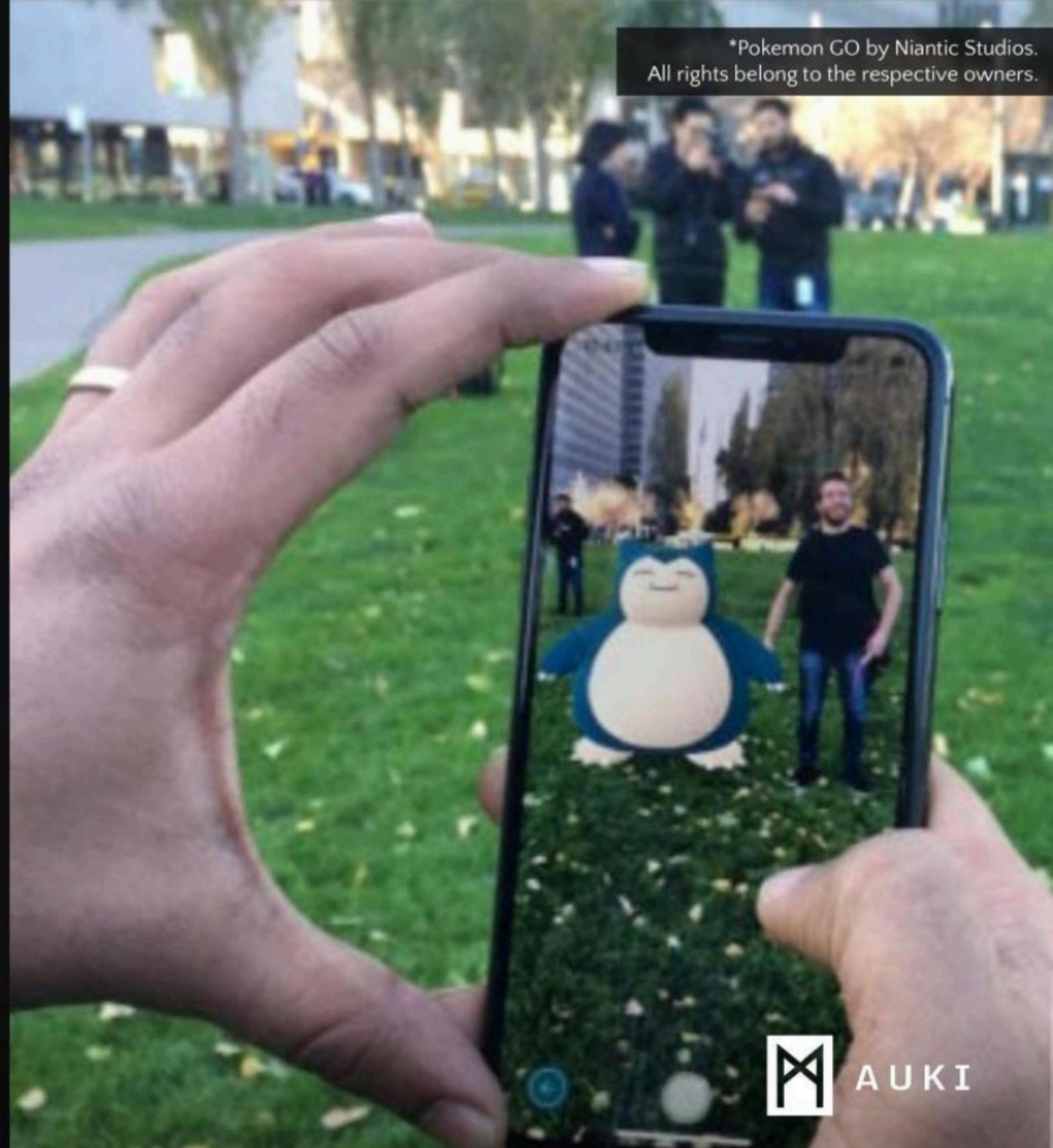
DISCREPANT POSITIONING

As a result of the fuzziness of the depth maps, participants can only place the AR world with a relative precision of several centimeters.

SMALL SPACES

The leading provider of shared AR experiences only supports a maximum of 8 participants.

*Pokemon GO by Niantic Studios.
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*Conceptual rendering.
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WHAT'S WRONG WITH AUGMENTED REALITY?

NO EMBODIMENT

Objects in virtual worlds can only be interacted with through digital interfaces. You are not embodied in the virtual world. Lacking gesture and body tracking means the world does not interact with you.

WALLED GARDENS

Experiences in AR are not interoperable, meaning you always have to choose which narrow augmentation of the world you wish to apply.

AR IS EXHAUSTING AND JARRING

From slow calibration, to indirect and inefficient interfaces, to lacking intersubjectivity – augmented reality quickly goes from exhilarating to exhausting.

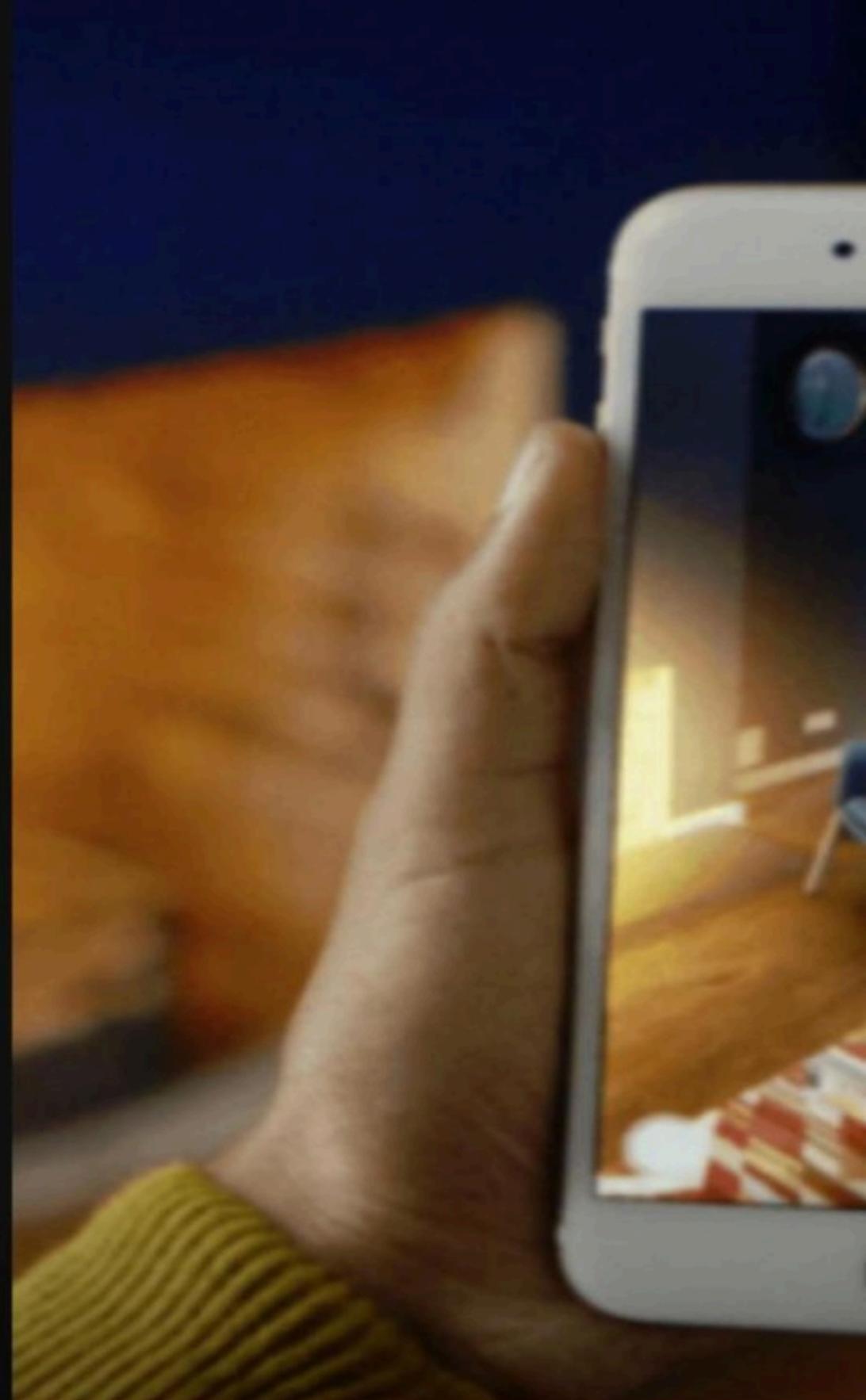
THE HANDHELD ERA

Humanity has one foot in the doorway. Even with all its limitations, augmented reality has captured our imagination. In this handheld era, AR is accessed through a digital looking glass offering us a narrow window into the augmented realm. We are limited in our ability to interact with both the *real* and the *virtual*, having only one hand free for either.

In the handheld era of augmented reality, we are on the outside looking in, seeing the world through a narrow peephole with one hand always tied behind our back.

Our handheld devices have only a rough sense of their position in either world, and shared AR experiences are warped by the dissonant perception of each participant.

And yet we dream. The market is already estimated to have grown to well over 20 billion dollars annually.





DEATH OF THE DISPLAY

The wearable era starts ushering in the end of physical displays. Persistent and precise augmented reality makes the digital display redundant, and allows for all content to be personalized.

By the dawn of the integrated era the notion of physical displays is already becoming anachronistic and quaint. Computers are sold without displays, and no one has owned a television set for years.

VIRTUAL KINGDOMS

The rendering rights for physical spaces can be bought and sold, creating a potential trillion dollar market. Rendering in the augmented world is regulated and monitored.

ADVERTISING REINVENTED

Personalized ads can appear virtually in physical spaces, generating new revenue opportunities for business owners. Impressions can finally be tracked in the physical world, and every advertising opportunity is optimized.

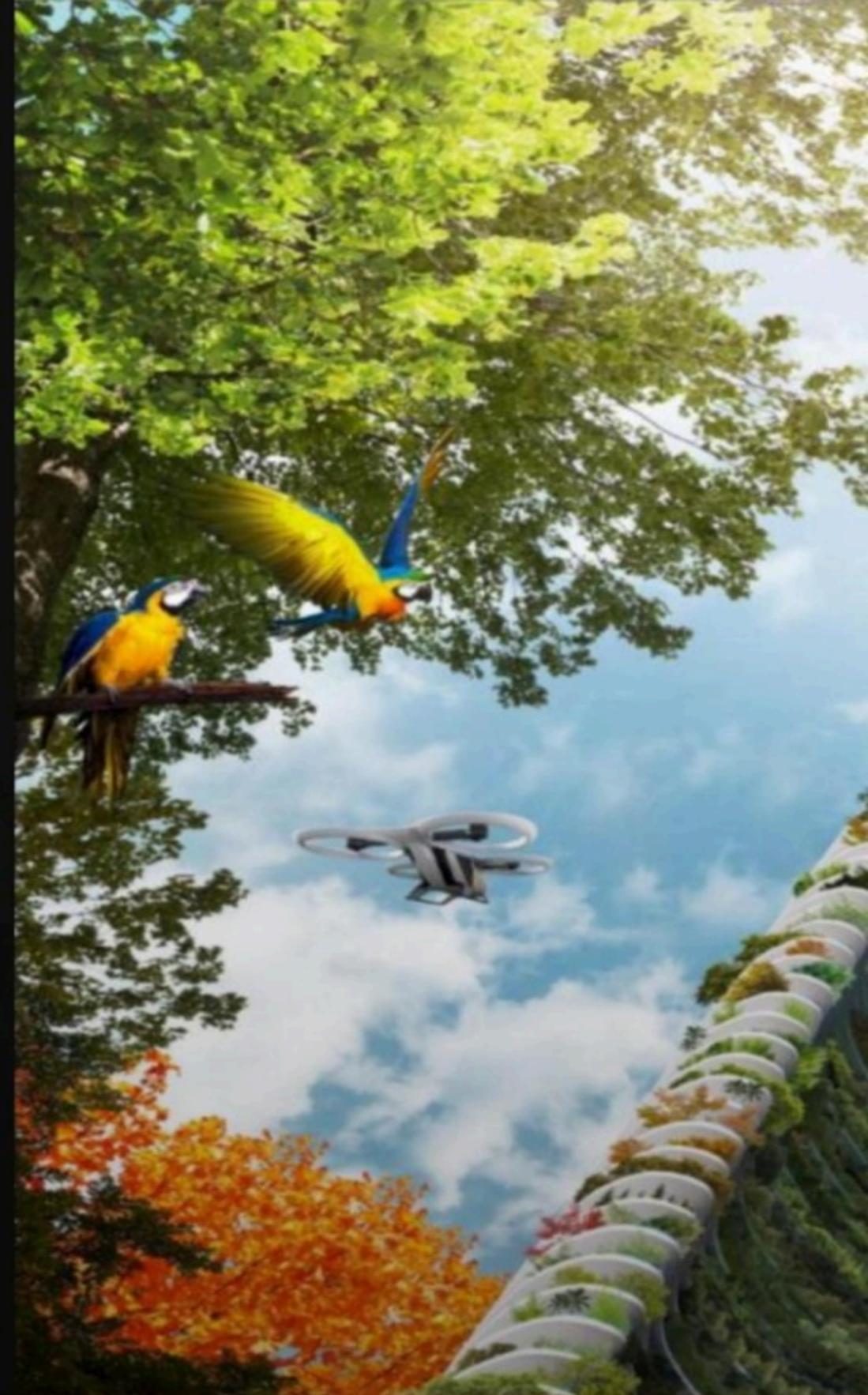
LEAVING FLATLAND

As our cities grow bigger, they reach up towards the heavens and deep underground. Two-dimensional maps and representations of the physical world no longer make sense. Human settlements are measured volumetrically rather than by area.

The GPS system is relegated to an obscure backup protocol, inaccessible within the towering urban landscapes. Location needs to be expressed as a position in space.

Vast fleets of automated vehicles and delivery drones navigate these complex and crowded three-dimensional environments at incredible speeds. Human pilots are the exception rather than the rule.

The positioning and mapping protocol of the future is peer-to-peer, collaborative, terrestrial and fast.



SOLVING FOR [X, Y, Z]

Before any of these visions of the future can materialize, there is a massive problem that needs to be tackled: **spatial computing**.

The foundational problem at the heart of the future AR metaverse is that electronic devices only have a vague sense of their literal place in the world, making them unable to reach a consensus about how to navigate or even render the metaverse.

For a persistent AR layer to be constructed on top of the world, one must first solve the problem of positioning. There's no way around it. GPS will never suffice, as it needs line of sight and won't work in dense urban environments or indoors. The nature of WiFi or Bluetooth frequencies means that triangulation can never reach the required accuracy.

Devices must know their exact 3D coordinate, not just a rough approximation of their longitude and latitude, to be able to enter the metaverse.

To build the AR metaverse, you must first **replace the GPS** and solve the problem of **spatial computing**.



*GPS satellite by Gary Cope.
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WHAT'S WRONG WITH SPATIAL COMPUTING?

THE BLIND PURSUIT OF VISION

In a desperate arms race to solve the trillion dollar spatial computing problem, everyone from Apple, Google and Microsoft to Snap, Niantic and Meta are embracing the *digital twin* approach to device positioning.

Billions of dollars are already being deployed, and dozens of acquisitions are being made, to try to recreate a 1:1 digital copy of the world that, combined with computer vision, can help devices find their place in the world.

But is their approach sound? The strategy will take many years to materialize, and is incredibly vulnerable to disruption. [Read more.](#)

*Concept by Geoffrey Vaudou.
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WHAT'S WRONG WITH SPATIAL COMPUTING?

CROWDSOURCED PRIVACY VIOLATIONS

The digital twin has to be crowdsourced, but who owns the rights of 3D scanned interiors of our homes and offices? How comfortable are we with surveillance capitalists monetizing our most intimate spaces?

SERFDOM AS A SERVICE

We are not being compensated by these large corporations for participating in the crowdsourcing efforts of the digital twin.

COMPLEX STITCHING

A crowdsourced digital twin will be very difficult to stitch together, and any imprecision in the stitching is inherited by the positioning. How does one solve the chicken and egg problem of creating a precise map without precise positioning?

THE INTERNET OF THINGS LEFT BEHIND

How will devices without cameras access this new positioning paradigm? We do not believe a system that neglects IoT can truly win the spatial computing arms race.

Reinventing augmented reality

The powerful Aukiverse SDK allows app developers to effortlessly create social augmented reality experiences. By providing turnkey multiplayer networking, instant calibration, a low-latency asset cloud, cross-app interoperability, embodiment, and new ways to monetize content, the Aukiverse SDK is an essential tool that addresses all the current pain points of creating augmented reality experiences.

SDK COMPONENTS



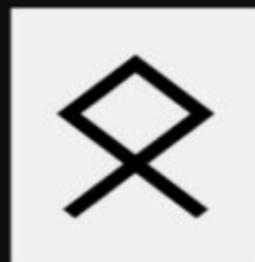
Manna
Positioning



Hagall
Networking



Ur
Embodiment



Odal
Interoperability



Fehu
Rewards



Dagaz
Topology



SDK COMPONENTS



Mathr - Human,
ability, intelligence

Manna - Instant Calibration

Our patent pending *instant calibration* method gives AR developers unprecedented ability to create social experiences. *Peer-to-peer positioning* ensures relevant relative positioning without awkward or time consuming preparations.



Hagall - Hail,
transformation

Hagall - Networking

Our bespoke distributed networking engine makes developing spatial multiplayer experiences effortless. Participants are automatically routed to the most cost-efficient networking provider, who earns tokens for hosting the networking service.



This live demo shows a prototype of the Matterless app, an interactive virtual pet experience, using the Aukiverse SDK to create a seamless social AR experience.

SDK COMPONENTS



Odal - Heritage,
estate, ancestry

Odal - Interoperability

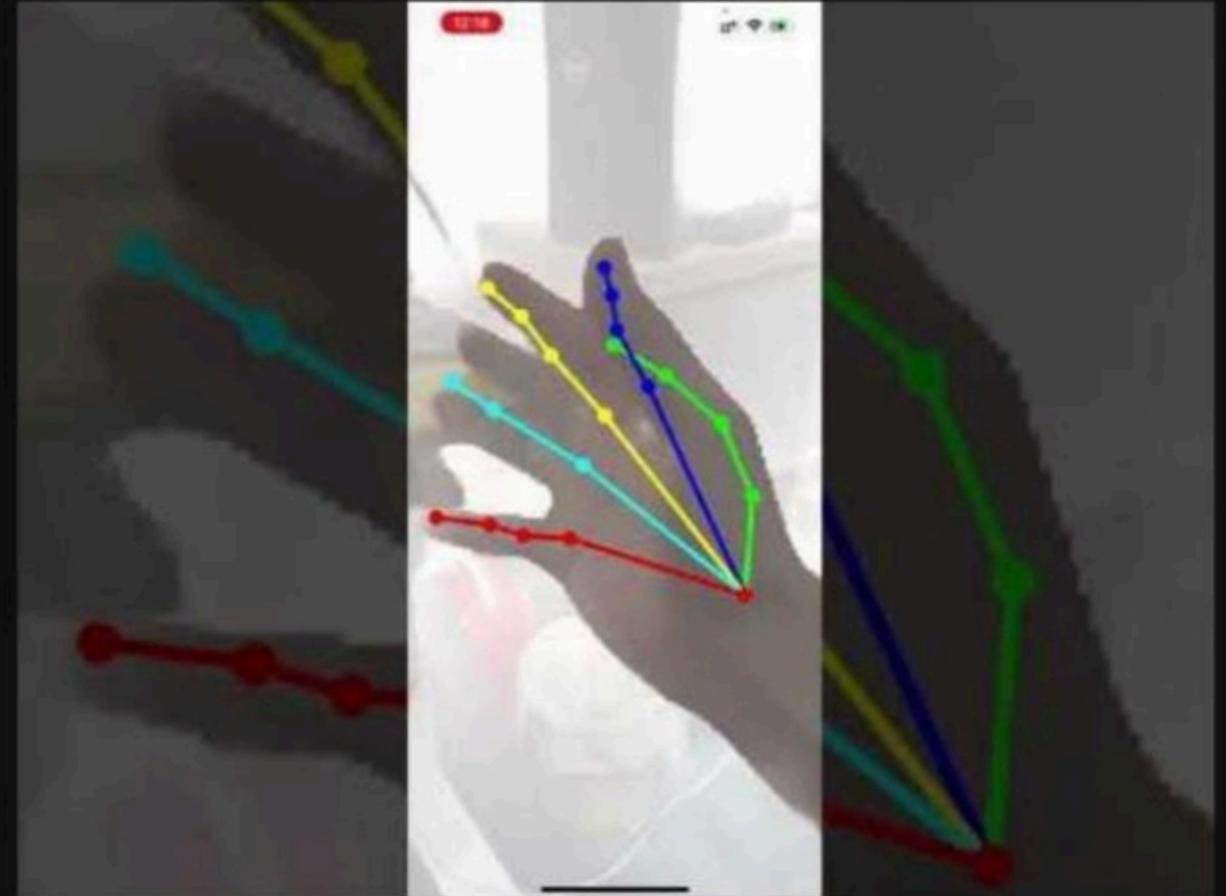
No matter which Aukiverse app your friends are using, you can seamlessly invite into your world. Our sophisticated asset store keeps assets in a low-latency cloud environment that makes it possible for all Aukiverse apps to be interoperable.



Ur - Strength,
physical power

Ur - Embodiment

Turnkey hand and body detection purpose-made for rich AR interactions makes it easier than ever to bring users into the virtual world. Embodiment in the Aukiverse allows users to physically interact with objects, enriching the experience and immersion.



The Aukiverse SDK allows you to interact with the world around you using your physical body. This pre-alpha footage of Ur demonstrates basic hand tracking.



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